

Spatial pattern of housing growth in the Northwoods

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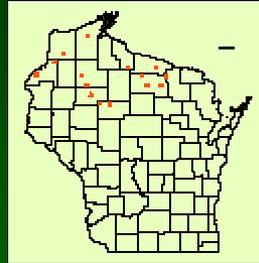
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Study Overview:

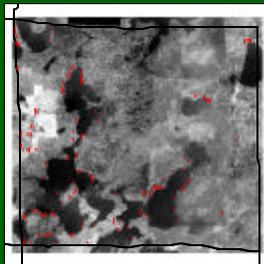
- Housing density across northern Wisconsin has increased since the 1930s. Density and spatial pattern of housing development affect the amount of forest fragmentation.
- This study investigates the relationship between spatial pattern of housing growth and forest fragmentation from the 1930s to the 1990s.



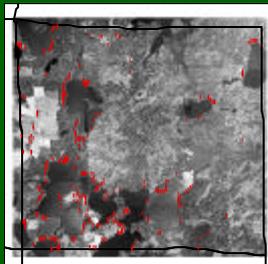
Approach:

- Housing locations were mapped using aerial photographs and topographic maps for 15 townships.
- Location of each housing unit was digitized for each of five time periods.
- Point pattern analysis identified regular, random and clustered spatial patterns.

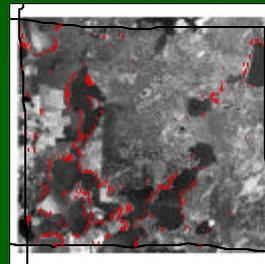
Housing Unit Locations in Three Lakes Township, 1938-1998



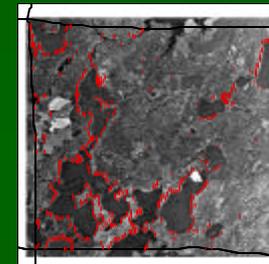
1938



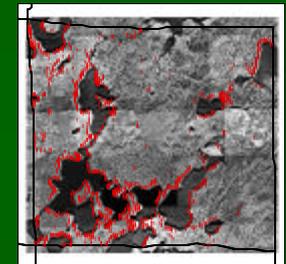
1948



1960

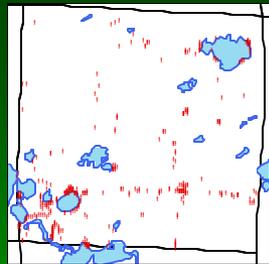


1980



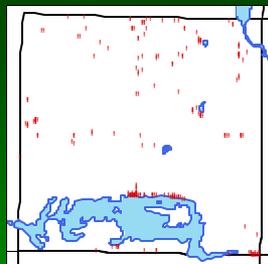
1998

1998



**Stella Township,
Oneida County**

- 5 units / km²
- Dispersed spatial pattern



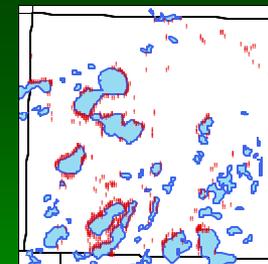
**St Croix Flowage Township,
Douglas County**

- 3 units / km²
- Dispersed spatial pattern

Conclusions and Outlook

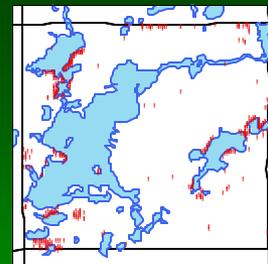
- Strong housing growth in rural, forested regions
- Until 1960 almost all housing units in the immediate vicinity of lakes
- Since 1960 development off lakes increasingly dispersed
- Townships with larger lakes show clustered housing patterns
- Fewer lakes result in dispersed housing
- Next, we will calculate the amount of forest fragmentation and identify other reasons for differences in spatial patterns

1998



**Webb Township,
Burnett County**

- 9 units / km²
- Clustered spatial pattern closer to lakes



**Rainbow Flowage Township,
Oneida County**

- 7 units / km²
- Clustered spatial pattern closer to lakes